

JOB PROGRESS REPORT

State: CaliforniaProject Number: W-54-R-15 Project Title: Nongame Wildlife InvestigationsJob Number: III-3.0 Job Title: Winter Sandhill Crane InventoryPeriod Covered: July 1, 1982 - June 30, 1983 Job Type: Survey and Inventory

SUMMARY:

During winter of 1982-83 age-ratio counts were made of wintering Greater Sandhill Cranes (Grus canadensis tabida) and Lesser Sandhill Cranes (G. c. canadensis) in the Central Valley of California. Also, an effort was made to capture, band and color-mark a sample of Sandhill Cranes in order to gain information on migratory habits and seasonal habitat use.

During the period from 23 December 1982 to 4 January 1983, a sample of Lesser and Greater Sandhill Cranes were aged. The age-ratio for Lesser Sandhill Cranes was 3.8% (170 young cranes per 4447 total cranes aged). Greater Sandhill Cranes had an age-ratio of 4.6% (43 young per 936 total aged). Aging information was collected by University of Alaska, Fairbanks graduate student Tom Pogson while Nongame Program personnel were involved in attempts to capture, band and color-mark cranes.

Five Lesser Sandhill Cranes were trapped, color-banded, collared and released at Merced National Wildlife Refuge (NWR), Merced County. Two of three attempts to capture cranes were unsuccessful. Only 5 of 30 birds trapped were retained; the rest escaped capture. Lack of experience trapping cranes and rainy weather combined to result in low capture success during the 1100 man-hour/5 month period from mid-November, 1982 to mid-March, 1983.

BACKGROUND:

During the past decade, the Department has made counts of Greater Sandhill Cranes on breeding grounds during waterfowl census. No special effort had been made by the Department to conduct age-ratio counts of Sandhill Cranes in California until December 1979. However, there has been considerable work conducted at Malheur NWR by C. D. Littlefield, U.S. Fish and Wildlife Service crane biologist, during the past decade. The counts done in 1979 were initiated as part of an effort involving several state and federal agencies aimed at improving research and management programs concerning Sandhill Cranes. To accomplish this, a multiagency task force under the leadership of the U.S. Fish and Wildlife Service has developed a number of species management plans. During 1979, an age-ratio of 6.6% immatures was obtained from a total sample of 1,784 cranes in the Thornton Area, and 7.8% (N=663) was obtained for the Gray Lodge Area. The same areas were surveyed in the winter of 1980, with the results being 6.1% (N=1,904) for the Thornton Area and 3.0% (N=450) for the Gray Lodge Area. During 1981, the age-ratio for Greater Sandhill Cranes was 4.6% (N=2509) at the Thornton Area while no counts were made at Gray Lodge Area. At least 12.0% immatures are needed for population stability (Miller, et al. 1972). Banding and color-marking

studies are identified as high priority research objectives in Pacific Flyway Technical Committee Management plans on Lesser and Greater Sandhill Cranes (Schlorff, et al. 1983). These studies are deemed necessary to determine location of breeding and wintering grounds, migration routes, and important stopover and staging areas for Sandhill Cranes throughout the Pacific Flyway.

OBJECTIVES:

One of the objectives of this survey was to determine the recruitment rate of young Greater Sandhill Cranes into the population wintering in California. Assessments were made as to the continued viability of wintering habitat for Sandhill Cranes in areas sampled. Another objective concerned the need to mark a sample of Sandhill Cranes in order to determine patterns of movement and habitat use.

PROCEDURES:

The Department has participated in the formulation of a Pacific Flyway Management Plan for the Central Valley and the Colorado River Valley populations of Greater Sandhill Cranes and Lesser Sandhill Cranes. The Department assumes several management responsibilities for research and population surveys. Age-ratio counts were identified in the plans as high priority items to increase our knowledge on the status of crane populations in California. Known concentration areas of Sandhill Cranes were chosen to make age-ratio counts in 1979, and the same areas have been visited during subsequent survey periods. Large flocks of birds were located and numbers of adult and juvenile Greater Sandhill Cranes and Lesser Sandhill Cranes were tabulated by Mr. Tom Pogson, Graduate Student at the University of Alaska, Fairbanks, Alaska. Capturing and banding of Sandhill Cranes was attempted at two sites. These areas were: 1) Thornton Area, northwest of Lodi, near the towns of Thornton and Walnut Grove, San Joaquin and Sacramento counties, and 2) Merced unit of San Luis NWR's Merced County. Because of bad weather, the trapping effort in the Thornton area was abandoned. The only birds banded and color-marked were captured at Merced NWR.

At Merced NWR, recoilless rocket nets were located at several different sites within habitats frequented by Sandhill Cranes. Rocket nets were located in corn stubble fields, drained impoundments, vegetation adjacent to roads, and muddy areas, bare of vegetation, where cranes apparently probed for invertebrate prey. Crane capture and banding was conducted by Nongame program staff with the assistance of Merced NWR personnel and DFG Waterfowl program staff.

FINDINGS:

Results of age-ratio counts during 1982 and previous years indicate that the Central Valley population of Greater Sandhill Cranes is not producing young at a rate that will ensure a stable population (Table 1). Results of 1982 counts of Lesser Sandhill Cranes also show low recruitment (Table 1). The 4.6% immature Greater Sandhill Cranes showing up in wintering flocks at Thornton is well below the 12.0% figure needed for population stability as is the 3.8% figure for Lesser Sandhill Cranes. Even though Sandhill Cranes are long-lived birds, it will not be long before the prolonged period of low recruitment of young will begin to show up in reduced numbers of wintering cranes.

Qualitative inspection of winter area indicates that adequate habitat is still available for cranes. However, incompatible land uses are occurring and expected to continue. Where suitable foraging and loafing areas are replaced by intensive agriculture, cranes are expected to disappear.

Table 1. Results of Age-ratio Counts Conducted on Central Valley Population Greater Sandhill Cranes, 1979-82, and Lesser Sandhill Cranes, 1982

<u>Greater Sandhill Cranes</u>				
<u>Year</u>	<u>Area</u>	<u>Total Aged</u>	<u>Immature</u>	<u>%Immature</u>
1979	Thornton	1784	117	6.6
	Gray Lodge	663	53	7.8
1980	Thornton	1894	117	6.1
	Gray Lodge	440	13	3.0
1981	Thornton	2509	115	4.6
	Gray Lodge	No data	No data	No data
1982	Thornton	936	43	4.6
	Gray Lodge	No data	No data	No data
<u>Lesser Sandhill Cranes</u>				
<u>Year</u>	<u>Area</u>	<u>Total Aged</u>	<u>Immature</u>	<u>%Immature</u>
1979-81	No data
1982	Merced Co.	2449	72	2.9
	San Joaquin			
	Area (Thornton)	1998	98	4.9

The findings of the crane banding and color-marking study are contained in the attached report cited below:

Schlorff, R. W. Sandhill Crane Banding and Color-marking study, 1982-83. Wildlife Management Branch, Nongame Wildlife Investigations, Job III-3.0, Progress Report (May, 1983). 12 pp.

ANALYSIS:

Low recruitment rates continue to show up in Greater Sandhill Cranes wintering in California. These are the result of continuing trends of nesting failures, loss of habitat, and various types of human and predator induced mortality on young Sandhill Cranes within their Pacific States breeding range. It has been 13 years since the Greater Sandhill Crane pre-migration count at Malheur NWR has indicated recruitment levels high enough to maintain a stable population (12.0%).

Lesser Sandhill Crane age-ratios were taken for the first time since the Department began aging cranes on the wintering grounds in California. Heretofore, the emphasis has been on the smaller population of Greater Sandhill Cranes. It appears that very low recruitment rates also characterize the Lesser Sandhill Crane wintering population. Further monitoring and assessments are needed before a trend can be identified or causes ascertained that can explain these results.

RECOMMENDATIONS:

1. Continuing winter age-ratio counts of all populations of Sandhill Cranes wintering in California.
2. Implement management programs designed to improve survivorship of young cranes on breeding grounds in California.
3. Coordinate efforts with other agencies to improve recruitment rates of all crane populations in Pacific Flyway.
4. Continue to enforce laws protecting cranes to reduce mortality on migration routes, wintering areas and breeding grounds.
5. Continue Sandhill Crane banding and color-marking study to mark a large sample of Greater and Lesser Sandhill Cranes.
6. Coordinate efforts with other agencies and researchers to accumulate information on cranes marked on wintering or breeding areas in the Pacific Flyway.

LITERATURE CITED:

- Miller, R. S., G. S. Hochbaum, and D. B. Botkin. 1972. A simulation model for the management of Sandhill Cranes. Yale University School of Forestry and Environmental Studies. Bulletin No. 80. New Haven Connecticut. 49 pp.
- Schlorff, R. W., G. Herron, G. Kaiser, C. Kebbe, G. W. Kramer, and C. D. Littlefield. 1983. Pacific Flyway Management Plan for the Central Valley Population of Greater Sandhill Cranes. U.S. Fish and Wildlife Service, Portland, OR.

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